



Internet**Home**Alliance

End User Needs

Consumer Communications and Networking
Conference

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Internet Home Alliance

- Network of leading companies advancing the home technology market by understanding the consumer
- Breakthrough research about the home technology market
- Provides collaboration and real-world testing opportunities
- Accelerate the ability to launch home technology products and services
- Non-profit organization formed in 2000

Alliance Members



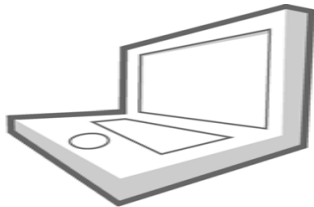
(as of December, 2004)

End User Needs

Consumer needs are grouped into Ecosystems to provide in-depth analysis on consumer opportunities, market revenue, technology and value chain analysis applicable to the home technology market's strategic challenges

Career Ecosystem

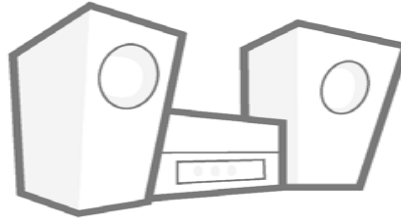
Help me with my career!



- Productivity
- Work Skills
- Communications / Scheduling
- Commuting

Entertainment Ecosystem

Entertain me!



- Audio
- Video
- Audio / Video
- Gaming

Family Ecosystem

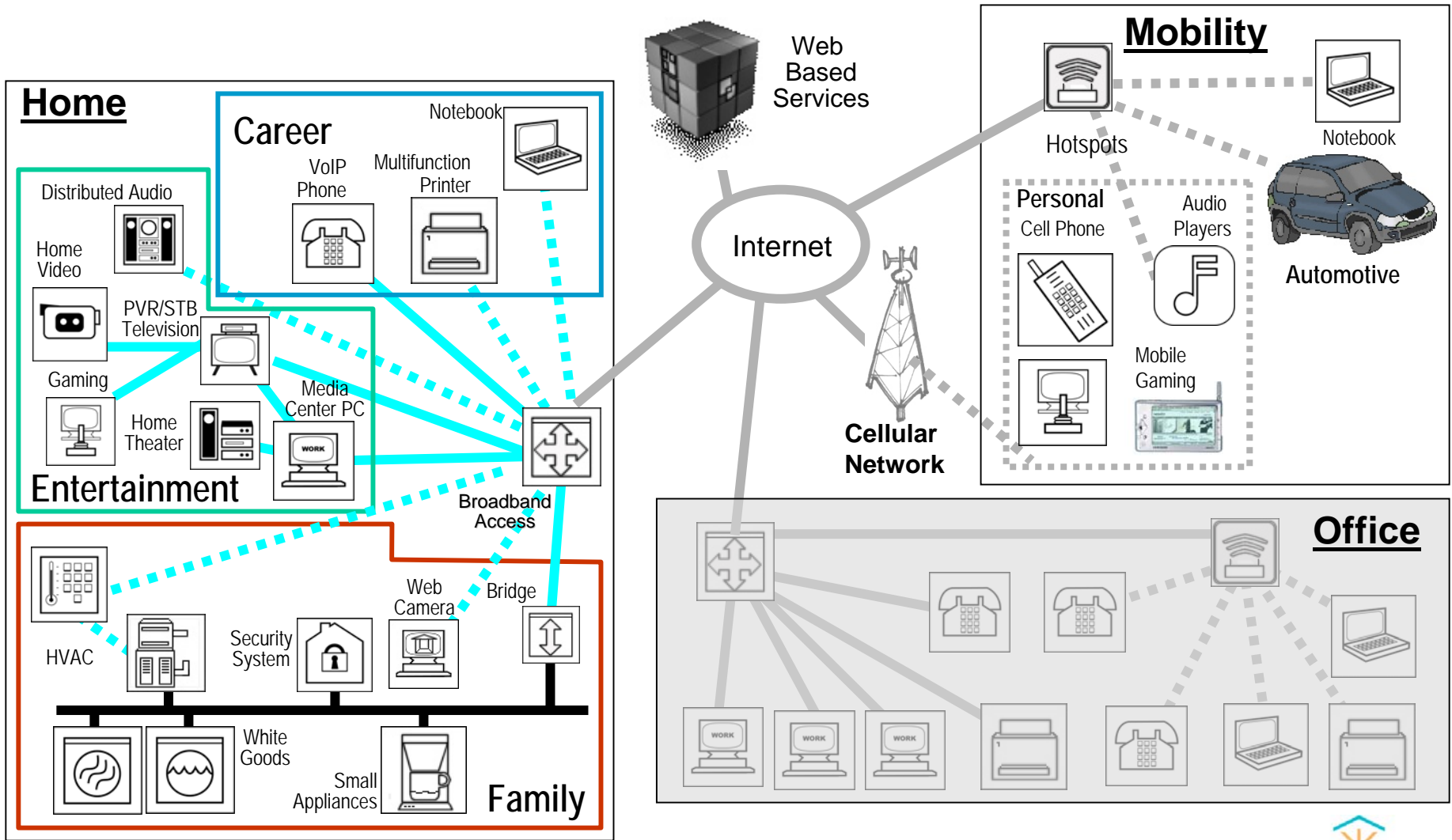
Help me take care of my family!



- Health & Fitness
- Household Chores
- Home Systems
- Communications / Scheduling

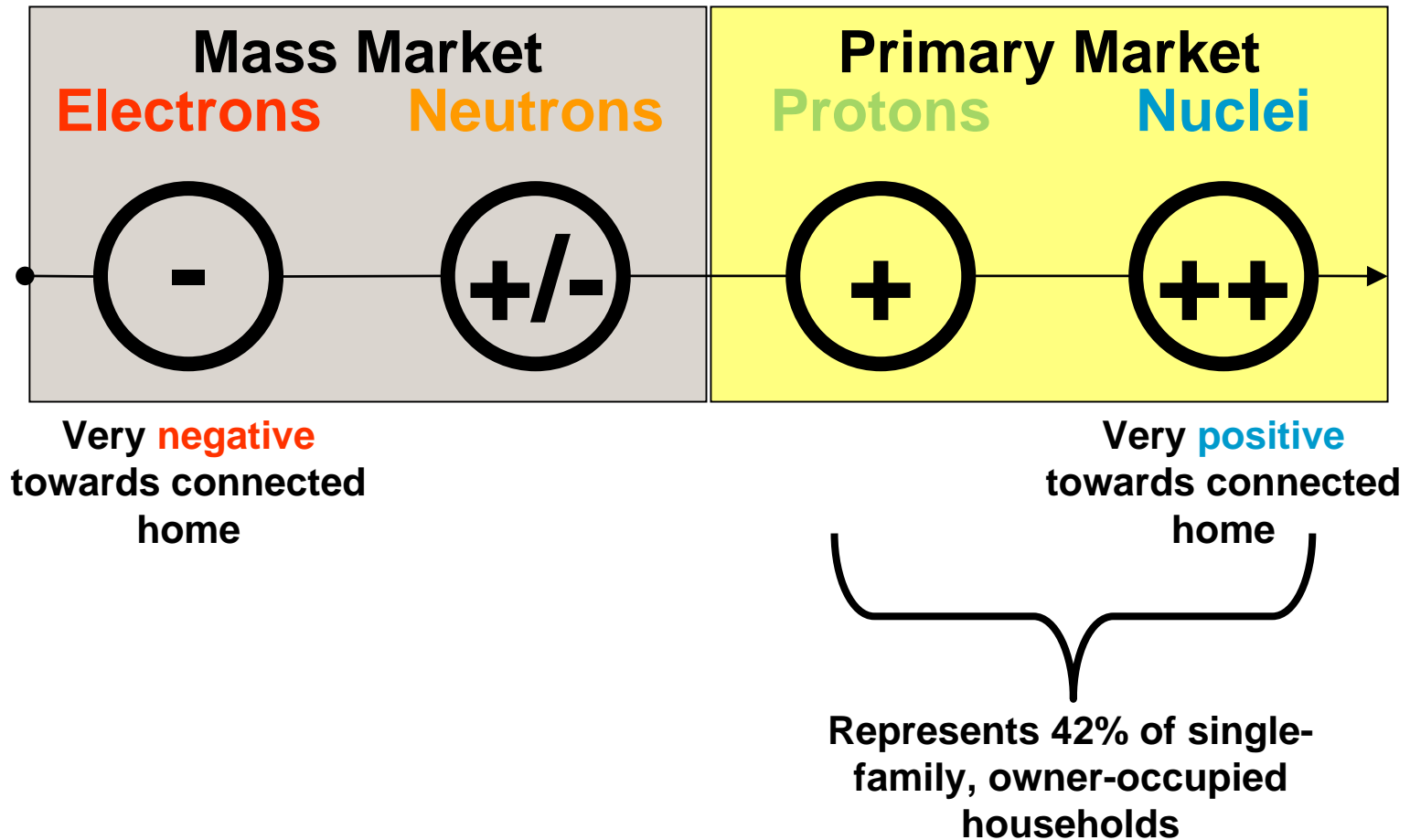
Connected Home

Introduction



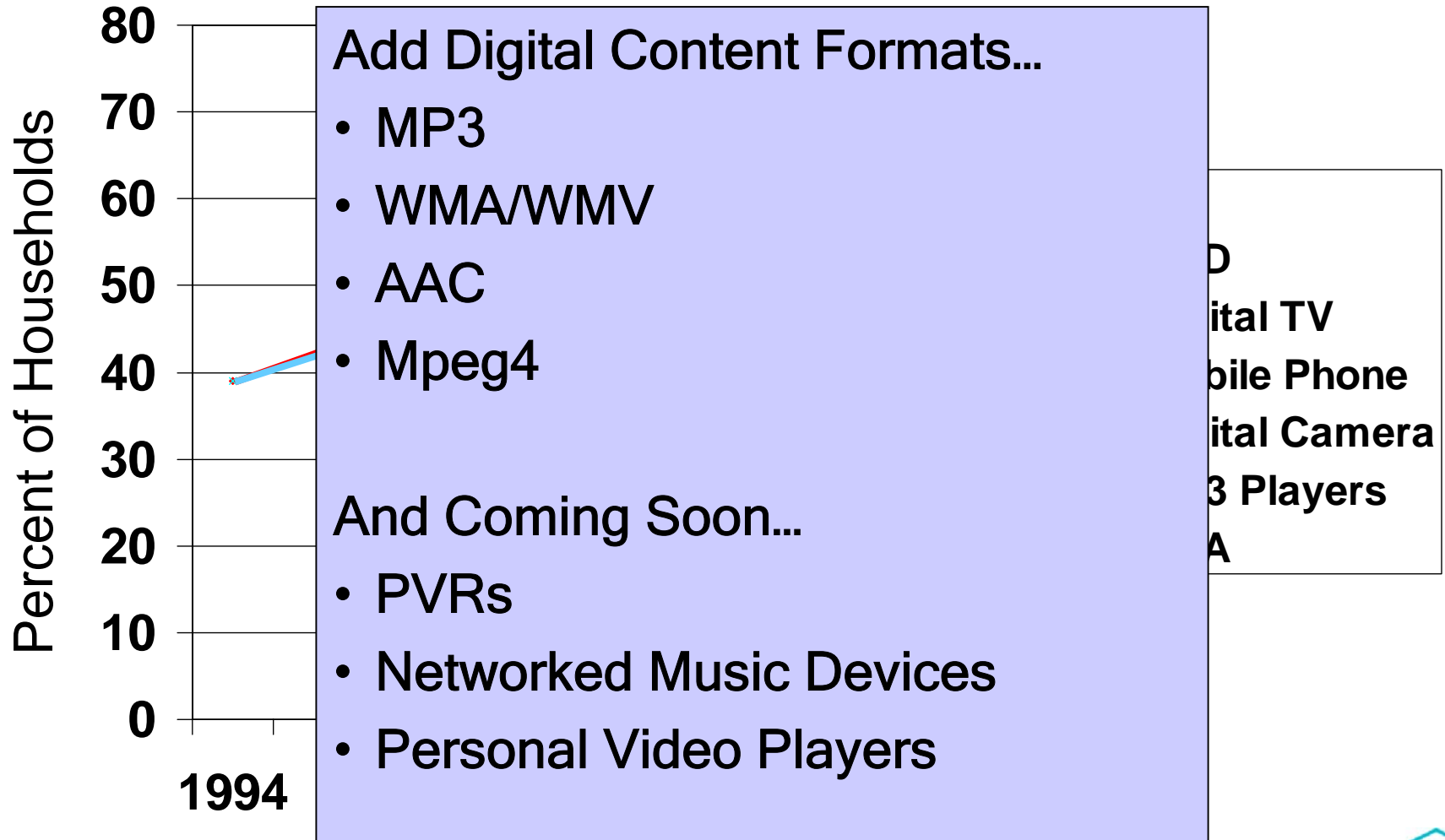
Who are the End Users?

Alliance Segmentation Scheme



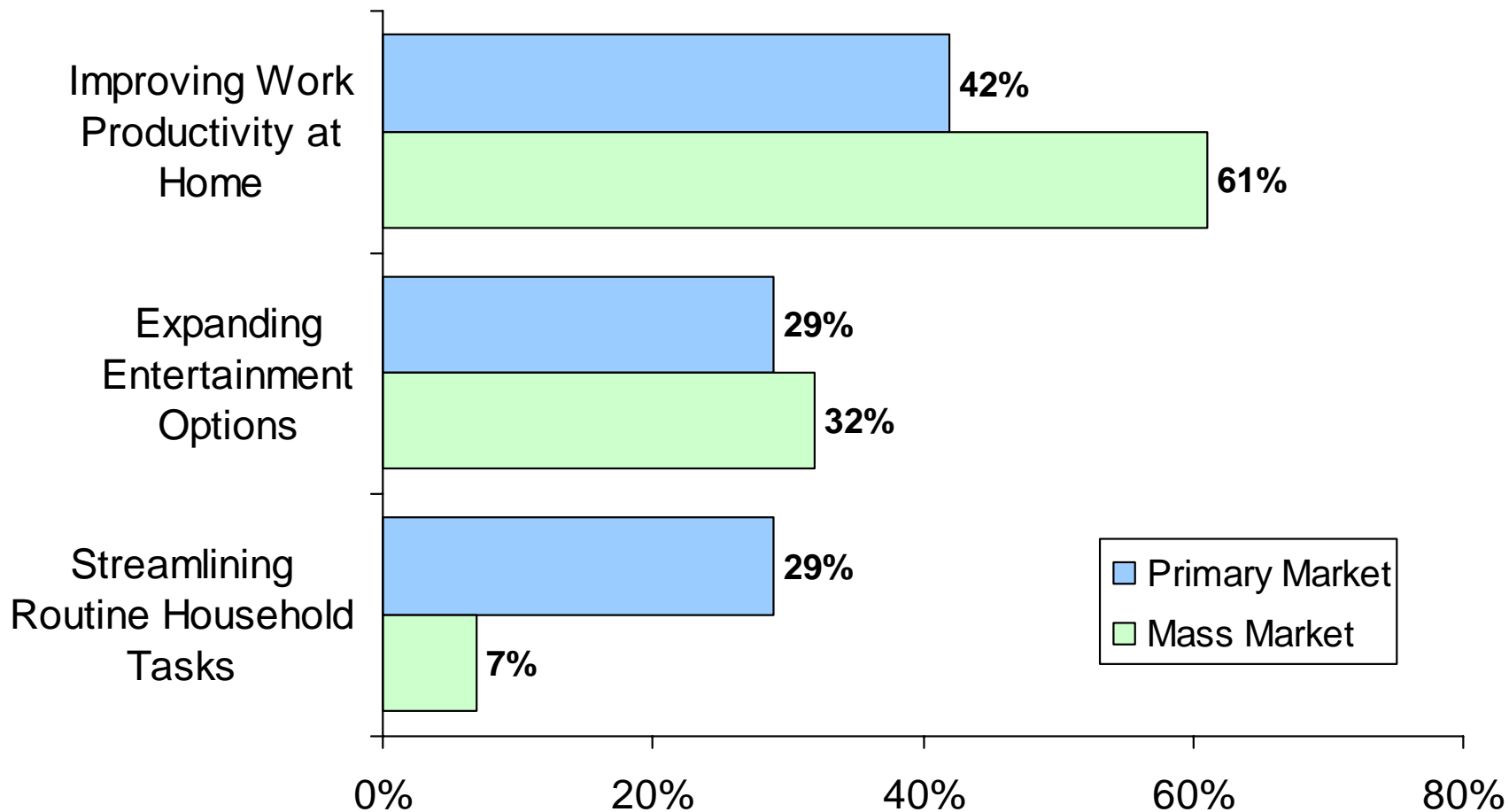
Household Complexity

Situation



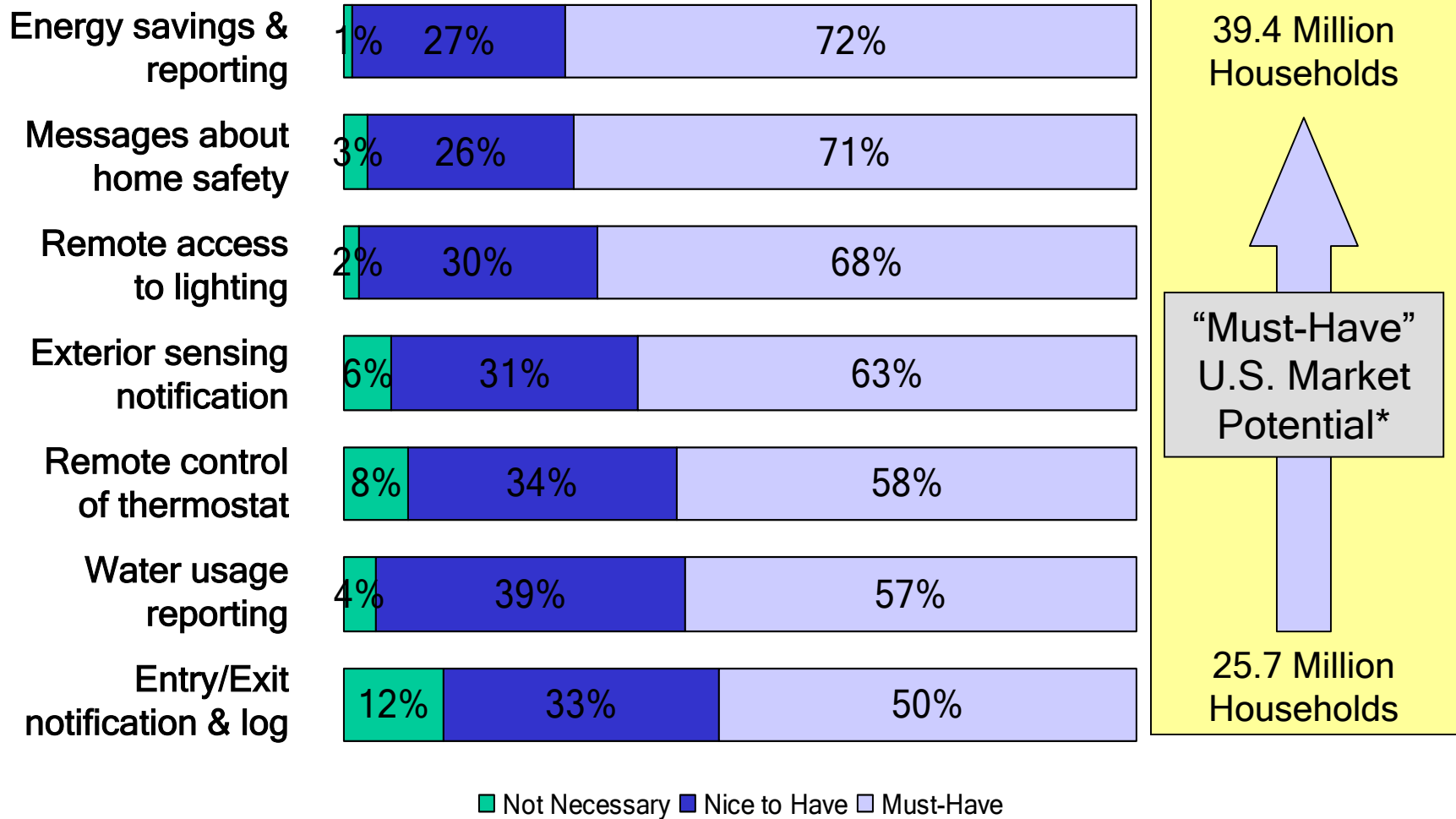
Why Network?

Main Reason for Adoption among Likely Adopters



Safe & Secure Needs

Situation



Combined results from Home Automation Hub, Event Notification, Digital Migration and State of the Market research

* - Based on U. S. single family, owner occupied households = 62.2 Million

End User Comments

Situation

“It would be nice to know if one of my rather antiquated appliances was about to blow my house to hell. I'd enjoy waking up to a warm house when Michigan weather does a sudden flip flop....as in 85 degrees during the day and a frickin' 32 degrees the following morning. Finally, the ability to have a bright light go on when the criminal brat next door is out on the prowl.”

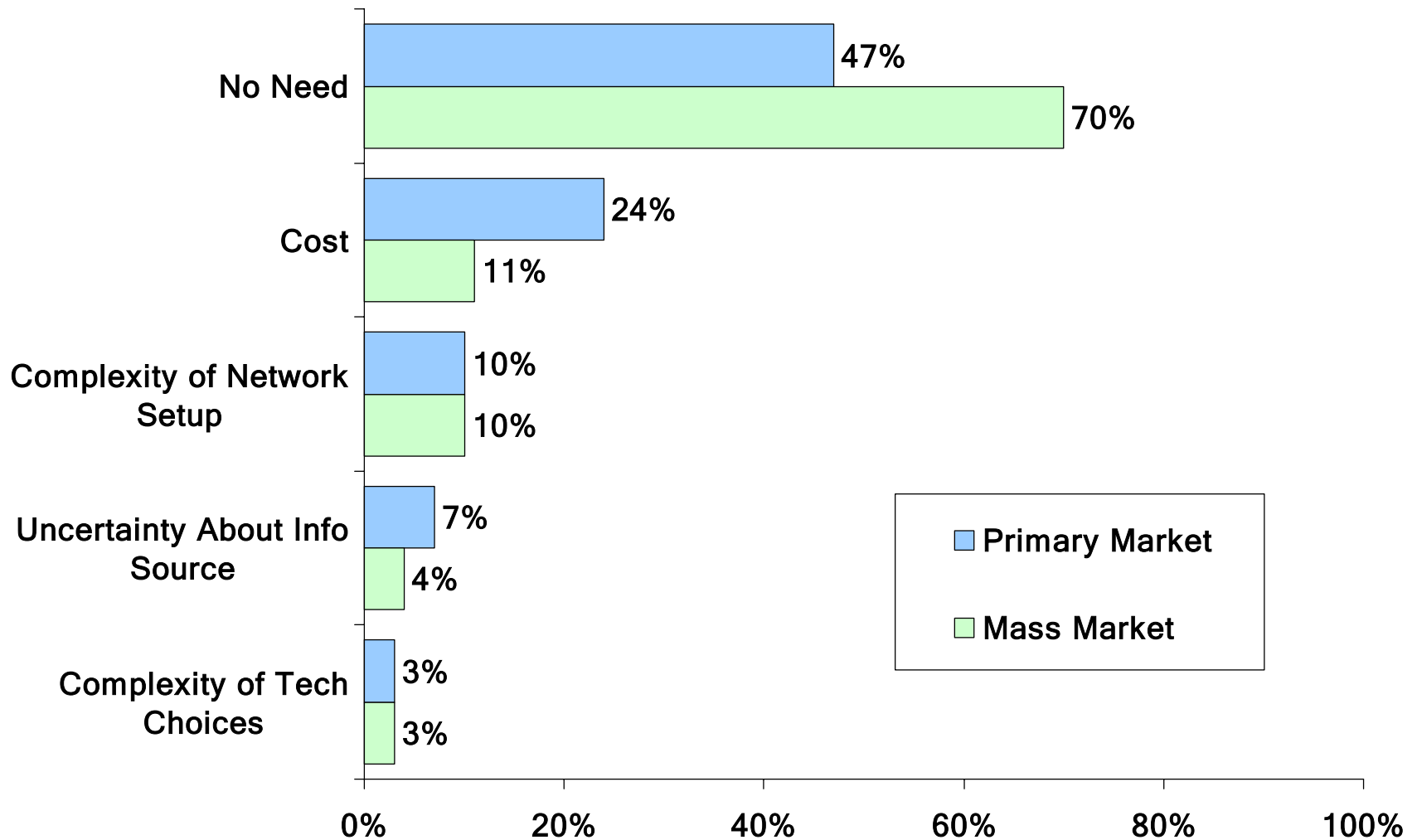
“If it had a portable remote, I could check to make sure the doors were locked instead of getting out of bed at night, I could check to make sure the AC unit was set on what I wanted without going to the thermostat.”

“Coordinating heating/cooling with waking. When the alarm goes off I would be able to adjust as needed.”

“Going to bed - then wondering if the garage door is closed, outdoor lights turned on, etc. Having your furnace, washing machine, dishwasher, etc. Stop in the middle of a cycle and not knowing what the problem is can be frustrating. Knowing the problem (even if you can't fix it yourself) before calling a repair person would be extremely beneficial. It would also aid in calculating the dollar cost of repairs and knowing you are not being ripped off.’

But, I don't need it....

Why End Users Do Not Have a Home Network



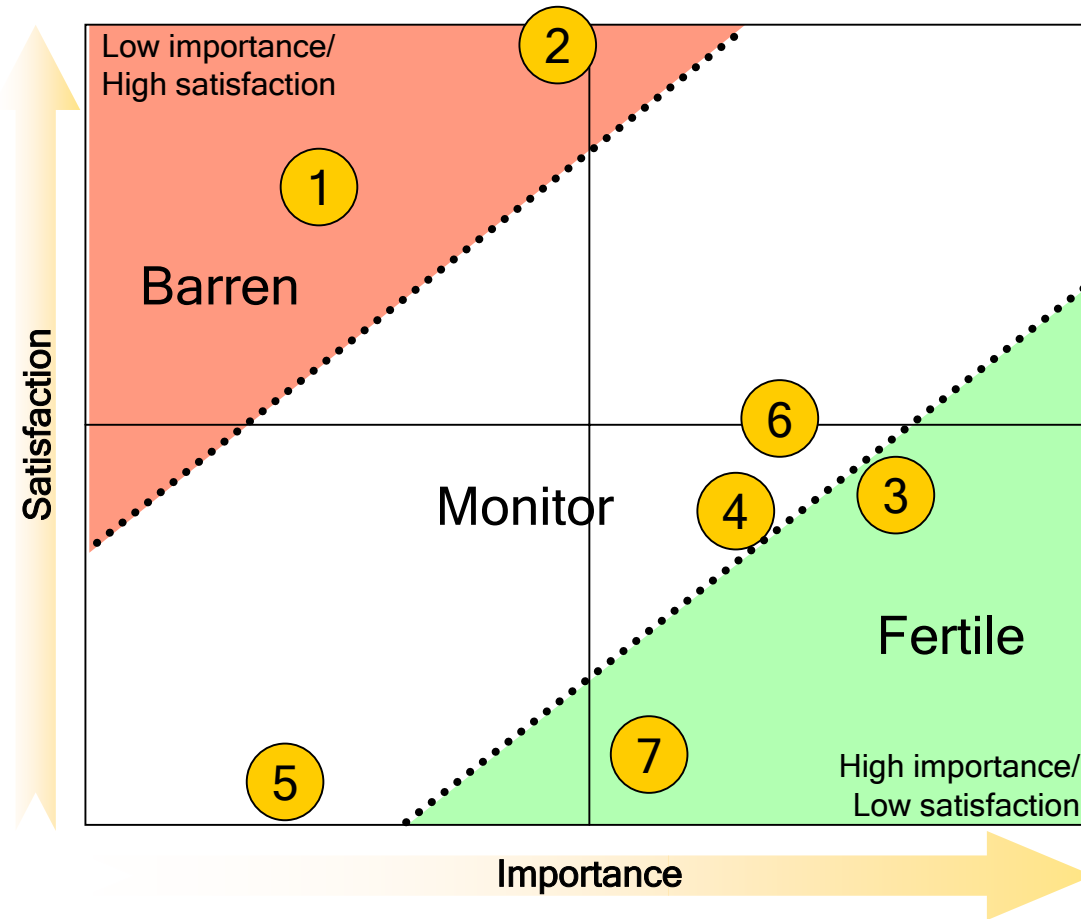
Confusion & Frustration

Consumers face a confusing and frustrating new digital content world.

- Explosion of digital content including email, music, video, photos, calendars, IM, books, banking, etc.
- Consumer frustration caused by fragmented digital experience
- Complexity created by collision of analog and digital device worlds
- Digitization has exceeded traditional delivery approaches
- Commercialization opportunity constrained by lack of seamless digital content access
- Digital Rights Management remains a barrier for consumers and content owners

Are We the Problem?

End User Needs Perception & Valuation

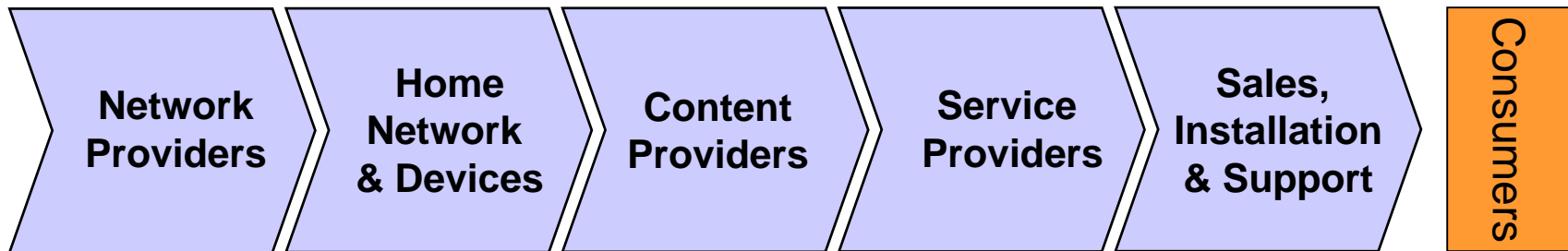


Consumer Needs

1. Knowing washing machine stopped unbalanced load
2. Knowing dryer finished
3. Knowing to change smoke detectors batteries
4. Knowing entry doors open or closed
5. Knowing to change furnace filter
6. Controlling temperature in home
7. Knowing appliances need repair

Theoretical Value Chain

Implications



- Broadband providers
- Telco (Dial-up)
- 3G Cellular providers
- Wireless service providers

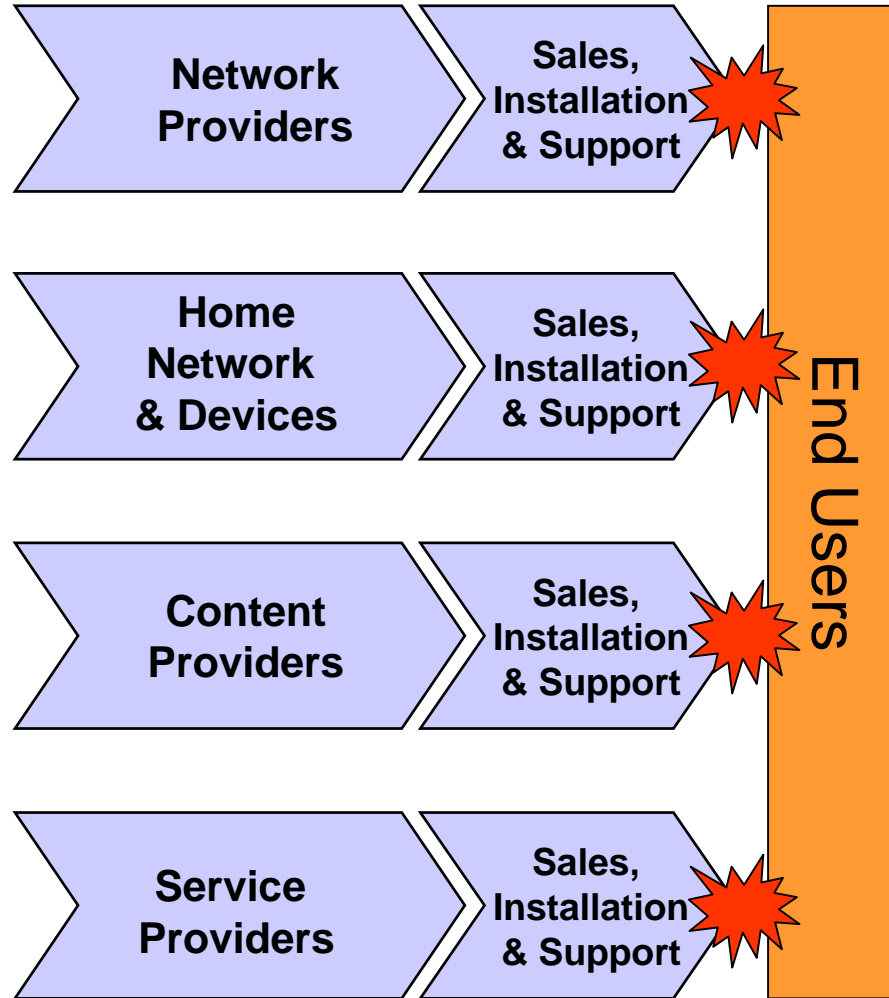
- Appliances
- Audio/Video devices
- Digital cameras
- Game consoles
- HVAC
- Mobile devices
- MP3 players
- PVRs
- PCs
- Security Systems
- Set-top boxes
- Routers & wireless access points

- Broadcast content
- Music
- Movies
- News
- Magazine content

- Entertainment Subscriptions
- Firewall / Virus Protection
- Photo Processing Services
- Satellite Radio
- Security
- Telematics
- Video on Demand

- Retailers
- Home Integrators
- Builders/ Developers
- Technology Support/ Service

Lots of Friction

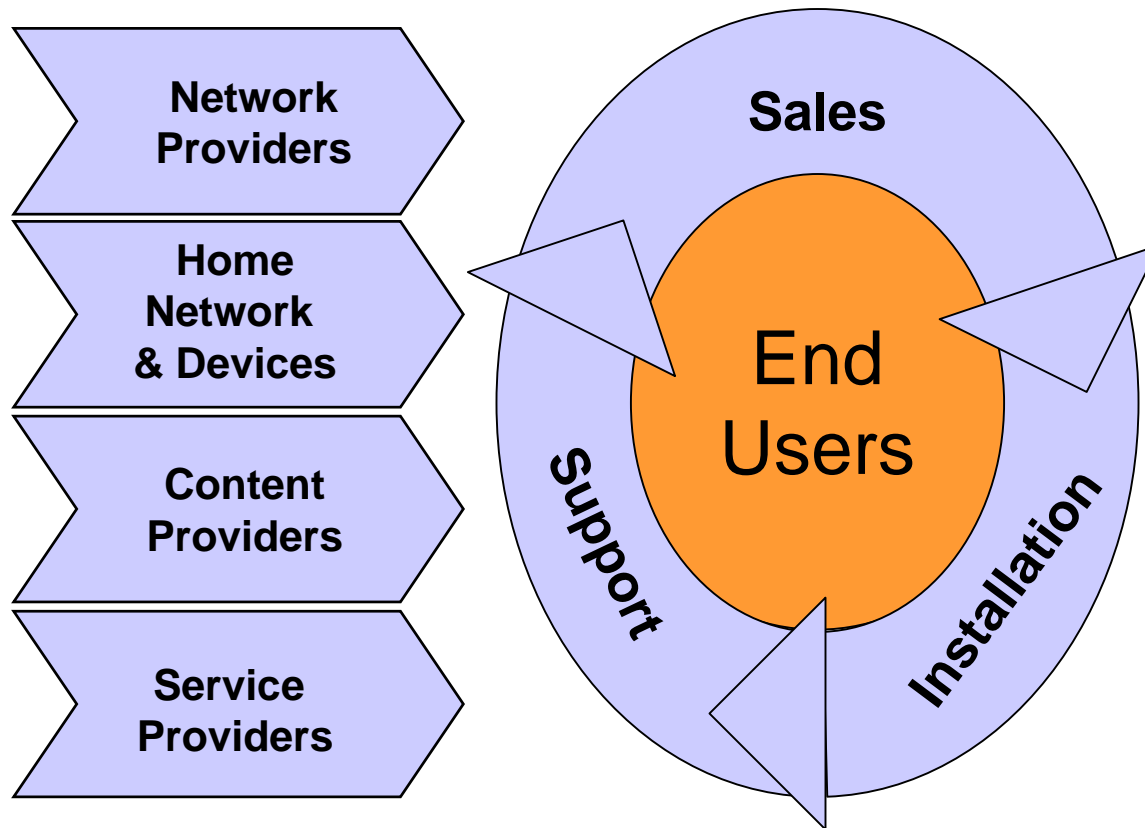


Examples:

- DSL, Cable Broadband, Cellular, Wireless
- Routers, Wireless access points, digital music receivers, PVR's
- Music download & jukebox, Movie downloads, Streaming content, News
- Anti-virus, firewall software, Voice over IP

Solution Provider

Implications



Examples:

- Home office service
- Digital entertainment service
- Home systems management
- Health management service
- Connected pantry grocery service

Key Challenges

Network Providers

- Difficult shift from customer retention emphasis – triple play
- Get the horse back in barn - deliver value beyond pipe
- Partner with downstream players to deliver higher service

Home Network & Devices

- Integrate cost effective components into solutions
- Navigate high cost of rapidly evolving technology landscape
- Deliver plug and play home networking – reduce home IT skills

Content Providers

- Enable new content experiences that create consumer demand
- Protect digital content without penalizing or complicating
- Embrace new business models before being forced

Service Providers

- Expand current customer relationship deeper into home
- Create cost effective, consumer compelling services
- Partner with customer interface partners to educate consumers

Sales, Installation & Support

- Commit to complex relationship – become trusted advisor
- Developing the required knowledge and skill level
- Invest in on-going support requirements

Can We Get There?

Solution

Enablement



- Platform
- Potential Services
- Availability
- Feasibility
- Complexity

Integration



- Interoperability
- Content availability
- Content protection
- Service appeal
- Value proposition

Solutions

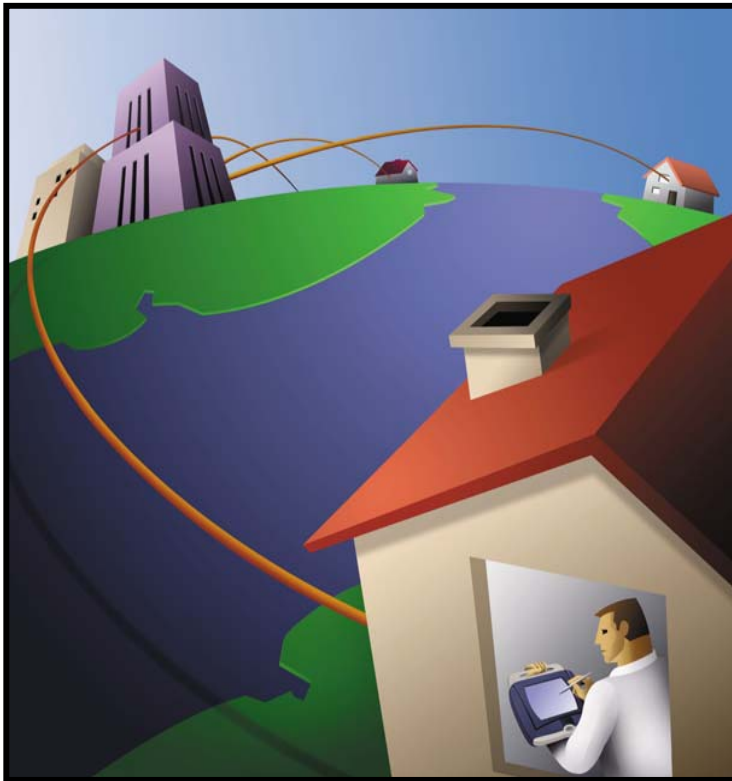


- Lifestyle fit
- Personalization
- Automation
- Service competition
- Price pressure

Home Office Service

Solution

Example - Deliver complete, productive home office in with corporate partnerships and entire value chain.



Consumer Needs

- Personal Computer support
- Software maintenance
- Wireless networking
- Firewall and virus protection
- Virtual Private Networking
- Voice over IP
- Cellular services
- Print servers/network printers
- Backup storage (onsite and off)
- Video conferencing
- Business services (travel, teleconferencing, shipping, etc.)

Peace of Mind

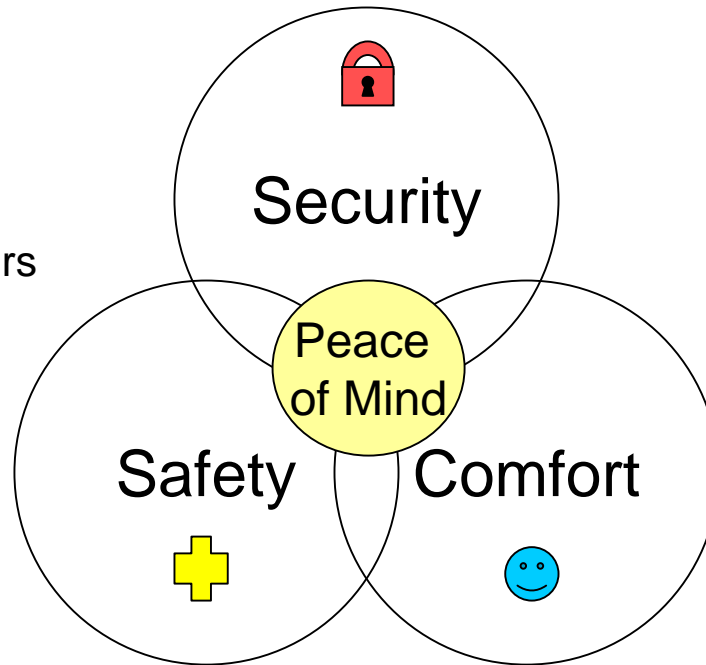
Unmet end user needs have identified a core set of features consumers are highly interested in adopting today

Security

- Advanced security system features and notification with video access
- Remote lock & unlock doors
- Integrated home system intruder protection and notification
- Status of garage door and entry log

Safety

- Increased fire, smoke and air quality monitoring, reporting and notification based on the severity
- New household damage awareness, notification and protection
- Enhanced system status awareness such as smoke detector battery life and furnace filter effectiveness
- Advanced control of outdoor lights with motion detection



Comfort

- Enhanced energy conservation, monitoring and reporting
- Expanded home temperature comfort control
- Control and adjust home temperature
- Enhanced control of lighting, irrigation and other home systems

Action Plan Ideas

Technology Actions

- Participate in the enabling technologies
- Look beyond your current technology perspective

Solution Actions

- Focus on end user needs
- Seek partners to reduce risk
- Identify value creation opportunities

Market Actions

- Get external validations
- Conduct real-world pilots with consumers



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